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I, LEANNE MYNOTT, MANAGER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004901257 for a patent by WALTER VAZQUEZ as filed on 11 March 2004.



WITNESS my hand this  
Eighteenth day of March 2005

A handwritten signature in black ink, appearing to read "LM".

LEANNE MYNOTT  
MANAGER EXAMINATION SUPPORT  
AND SALES

AUSTRALIA

Patents Act 1990

**PROVISIONAL SPECIFICATION**

APPLICANT: Walter Vazquez  
NUMBER:  
FILING DATE:

Invention Title: A NEW PRESSURE TURBINE

The invention is described in the following statement:-

## A NEW PRESSURE TURBINE

### **Area of the invention**

This invention relates to the area of turbines in general and in particular to an improved all purpose turbine which can be driven by any gas or liquid acting on its propellers. In particular the invention relates to a more efficient turbine which maximises the energy transfer of the fluid to the turbine.

### **Background to the Invention**

During the nineteenth century high speed waterwheels called turbines were invented. The same basic principles are used today. As water enters conventional flow through turbines the water hits the turbine blades and drives the turbine.

It is now common for all manner of low viscosity fluids to be used to drive turbines and these fluids include gas and steam as well as water. The invention will however for convenience sake be discussed herein with reference to a water driven turbine although it is to be understood that it could be used for a wide range of applications from hydro-electricity generation down to much smaller applications.

As a fluid passes through a turbine there is however a significant loss of kinetic energy in this process as turbines are of varying efficiency with respect to the transfer of energy to their blades and also act as an obstruction to the fluid flow. In fact the greater the number of blades and the poorer their efficiency, the more fluid flow will be impeded.

### **Outline of the Invention**

It is an object of this invention to provide a turbine of a type which is pressure driven and utilises the energy obtained by blocking fluid between adjacent blades of a turbine and avoids the energy loss of conventional turbines where a fluid flows past such blades.

The invention is a turbine having a body portion with a rotatable concentric inner member having a central shaft and a plurality of axially oriented blades extending between a peripheral wall of the inner member and an inner face of a peripheral wall of the body, the space between said walls defining a channel into which a fluid may pass, the arrangement being such that a fluid may be directed through at least one inlet aperture in the body wall to act on any blade and fill the space between adjacent blades and thereby cause the inner member to rotate, the fluid leaving the turbine through a larger outlet aperture in the body wall.

It is preferred that the inlet apertures pass diagonally through the body wall to direct the fluid towards the blades.

It is further preferred that the inner member have excised portions such that an annulus surrounds the shaft and effective spokes pass from this to its peripheral wall thereby reducing the weight of the inner member.

In order that the invention may be more readily understood we shall describe by way of non limiting example a particular embodiment of the invention.

#### **Brief Description of an Embodiment of the Invention**

An embodiment of the invention wherein the fluid is water will be described here. It is to be understood however that the turbine of the invention could be driven by any fluid.

The turbine has an outer housing for an inner rotating component which has a central shaft concentric with the housing. The inner component in this embodiment of the invention has an annular portion about the shaft with radial members extending to a circular peripheral wall.

On the outer face of this peripheral wall are a plurality of axially oriented blades extending between the peripheral wall of the inner member and an inner face of the wall of the housing, the space between these walls defining a channel into which a fluid may pass. The blades however cause individual compartments to be formed within this channel.

In this embodiment of the invention two diagonally oriented apertures are provided through the housing wall the arrangement being such that a water may be directed through at least one inlet aperture in the body wall to act on any blade, fill the space between adjacent blades and cause the inner member to rotate. The fluid leaves the turbine through a larger outlet aperture in the opposing side of the housing wall thereby permitting the water to exit the turbine.

The effect of the water contained in any compartment causes the inner component to rotate and consequently the shaft rotates. This rotation can be used to drive a generator or any other chosen device. Given the application of the turbine of the invention to the generation of hydro-electricity it has been calculated that where two inlets are applied to two separate blades the pressure available to produce torque is doubled. In other words doubling the number of inlets supplied with water doubles the pressure available to provide torque.

By use of the turbine of the invention either far fewer turbines are required to generate an amount of energy generated by conventional machines or much more energy can be generated by the same number of machines. Owing to the minimal bulk of the turbine of the invention many more such turbines could be accommodated in the space currently used by a conventional flow through turbine.

While we have described one embodiment of the invention here the turbine of

the invention has many applications.

In another embodiment of the invention the turbine is used to drive a car engine. In this case the turbine is supplied by a continuous flow of gas from a pressure vessel incorporating a pressure valve that will release the gases once they reach a certain level, several fuel and oxygen injectors, and a pressure sensor that will send its signal to a computer and will tell the fuel injectors to fire once the pressure in the vessel falls below the required level to turn the blades of the turbine.

The pressure vessel will be connected to the turbine via a pipe that connects the hot gases to a heat exchanger (water cooled radiator). This will deliver gases at a mild temperature compared to that produced by a conventional piston used in car engines.

Clearly the turbine of the invention has many applications and while we have described herein one particular embodiment of the invention it is to be understood that variations and modifications in the materials used and the features described can still lie within the scope of the invention.

DATED THIS 11<sup>th</sup> DAY OF MARCH 2004

WALTER VAZQUEZ  
By his Patent Attorneys  
A TATLOCK & ASSOCIATES